Nurdles in a Watershed-Crumbled Paper Lab

Description: Students will create a model watershed to observe the effects human activity and pollution can have on the watershed.

Audience: Middle School

Student Outcomes:
- The student will model the effects of Nurdles and human activity in a watershed.
- The student will communicate valid conclusions based on their observations.

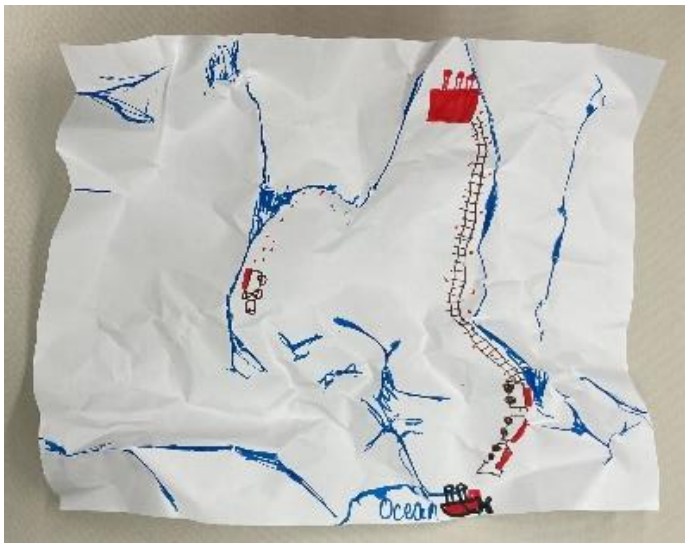
Teacher Background:
Hurdles with Nurdles
The Great Nurdle Hunt- problem with nurdles
Nurdle Fact Sheet

Materials:
- Paper
- Markers
- Spray bottles with water
- Tape
- *Baking tray or shallow pan (*optional)

Teacher Prep:
Have all materials ready for students to use. Make sure there is a flat clean surface for students to work on. If there is no table available to work on students can use the optional baking tray/shallow pan to place their watershed paper.

Introduction:
Show the following clip from Hurdles with Nurdles (It starts at :28- stop the clip at 4:04)

Procedures:
1. Each student will get a sheet of white paper and crumble it up until you get “Land formations” such as mountains, valleys, hills etc. (if you crumble it too much you will not be able to see the land formations.
2. With a blue marker, brush the tops of the ridges and peaks of the high elevation points on your paper. See example below.
3. Now you are going to want to add a factory to represent where the nurdles are being made, a railroad that leads to where the potential spot for the ocean is, a truck carrying nurdles and a ship that is loading nurdles by the ocean. Anything in red represents Nurdles. Note that in the example there are some red dots along the path of the truck and train representing the spillage that occurs along the transport route.



4. Next, you will need to tape down the edges of the paper to the table or on the inside of a dish/pan. This is to ensure that as the paper gets “rained” on it does not flatten out and the landforms stay put.
5. Finally, you will get a misting spray bottle and start spraying directly above you model. This represents the rain that occurs. As you continue to spray notice what is happening to the Nurdle pollution? Where is the water collecting? Where are your watersheds forming? Where are the Nurdles collecting? What potential problems could you see happening?

Questions/Discussion:

If a factory is in an inland city what effect, if any, would it have on our oceans? What other effects might it have on that location? What are some solutions?

How will a watershed be affected by a nurdle? What does that mean for surrounding areas of water?

What effect does human activity have on the watershed?